REMARKS

Favorable reconsideration and allowance of the present patent application are respectfully requested in view of the foregoing amendments and the following remarks. Claims 1-3 and 5-7 are pending in the application. Claims 3 and 5 have been amended. Claim 4 has been cancelled. Claims 6 and 7 are newly added.

Although there is no indication in the body of the Office Action that the Information Disclosure Statement was objected to, we have noted the Examiner's notation on the PTO-1449 attached to the Office Action that a date is required. Accordingly, we are resubmitting the PTO-1449 with the date included in order to address the notation.

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Paik et al. (U.S. Patent No. 6,076,088). Applicant respectfully traverses this rejection.

In the Applicant's claimed invention, an object data search apparatus uses a database to store object data in association with a plurality of attribute words categorized according to the sentence elements of a natural language. An input unit receives an input of a search criterion in the form of a sentence of the natural language. A criterion retrieval unit analyzes the search criteria in the form of the sentence and retrieves one of a plurality of search words that respectively corresponds to sentence element categories of the natural language. An object retrieval unit searches the database using each of the search words that are respectively associated with the sentence element categories and retrieves the object data associated with the attribute words that match a single search word of a plurality of search words. An output apparatus outputs the object data thus retrieved.

In col. 3, lines 49-58, the Examiner asserts that Paik et al. teaches a database for storing natural language. This section states that:

> In short, a set of documents is subjected to operations which extract concept-relation-concept triples (CRCs), which are stored in a data organization (such as a database) for query purposes. In the specific embodiment, the first concept is a proper name. The CRCs may be converted to a knowledge representation (KR) prior to indexing and storage. Query text is subjected to similar processing. In a specific embodiment, new names, events, or concepts are also provided with time-stamped information so that an instant chronology is constructed or updated.

Paik et al. merely discloses identifying words with concepts and creating a KR from the concepts with which the identified words are query processed. In Paik et al., the query processed by conversion into CRCs is presented as a question regarding who, what, where, when, why and how so that the system is capable of responding to that.

In other words, from a proper noun in a given sentence of query, a noun (concept) related to the proper noun in the sentence is derived.

This is in contrast to the present invention that uses a construction where attribute words having an agent of action category, attribute words having action category and attribute words having an object of action category are stored, the categorization being done according to sentence elements of a natural language.

The present invention retrieves an object adapted for the agent of action category to which the questioner belongs, the type of action intended to be performed

by the questioner and the object of action. As shown in Fig. 7, the agent of action is first retrieved, then the action and the object of action are retrieved in the stated order.

In the CRC processing disclosed by Paik et al., it is impossible to retrieve an object adapted for the agent of action category and the action. For these categories, the CRC processing used for situations for which the present invention is designed, will only produce results represented by "LINK" relations.

Therefore in Paik et al., there is no mention of storing object data in association with a plurality of attribute words categorized according to the sentence elements of a natural language. Paik et al. only mentions storing proper names and providing new names, events or concepts to support the construction of or updating of an instant chronology. Paik et al. fails to disclose searching the database using each of the search words respectively associated with the sentence element categories, and retrieving the object data associated with the attribute words that match a single search word or a plurality of search words.

Further, as stated in MPEP § 2131, "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference." Because Paik et al. does not disclose each and every claim element as disclosed in claim 1, the applied art cannot anticipate the Applicant's claimed combinations as alleged by the Examiner.

Claim 2, by virtue of depending from claim 1 should be allowable for at least the same reasons set forth above with regard to claim 1. Accordingly, it is respectfully submitted that the rejection of claim 2 be reconsidered and withdrawn.

In addition, it is respectfully submitted that claim 2 is independently allowable. Paik et al. teaches a sense disambiguator that assigns a unique sense, which takes the form of a concept, to each content bearing word. The disambiguation algorithm develops a decision list for each context bearing word. In Figure 4A, column 14, lines 1-14, Paik et al discloses:

1) a Special Linguistic Construction based concept – relation – concept (CRC) extractor with an associated Linguistic Construction Specific CRC Extraction Rule Base;

2) a Special Semantic Relation-Based CRC Extractor with an associated Semantic Relation Specific CRC extraction;

3) a Syntactic Relation to Semantic Relation Mapper with an associated Mapping Rule Base; and

4) Temporal Information Extractor with an associated Point-in-Time Semantic Relation based CRC Extraction Rule Base.

This is in contrast to claim 2 of the present invention that uses a database to store destination data at least associated with an attribute word having an agent of action category, an attribute word having an action category, and an attribute word having an object of action category. Figure 6 of the Applicant's invention illustrates an exemplary embodiment implementing the features of claim 2. A comparison of the Applicant's Figure 6 with that of Paik et al.'s Figure 4A, reveals that they are quite different and cannot be characterized as anticipating the claim under 35 U.S.C. § 102(e). Therefore, it is respectfully submitted that prior art should be provided teaching or suggesting the claimed feature, otherwise the claim is independently allowable.

In the Applicant's invention, the object retrieval unit searches a database using **each** of the search words respectively associated with the sentence element categories and retrieving the object data associated with the attribute words that match a single search word or a plurality of search words.

In the portion of Paik et al. referred to by the Examiner, two broad categories of information seeking behavior are disclosed. The first category is querying which uses a very specific set of information in answering a question. Users must devise a "query" using specialized terms or commands. This type of search requires a high degree of familiarity with the appropriate specialized terms or commands that must be used to implement a successful query strategy. The present invention dispenses with the need to conform queries so tightly to specific language and commands.

The second category is browsing which allows a user to explore a broad topic with only a vaguely defined need. This browsing is one example of the type of sequential hierarchical searching that the present invention has been developed to replace, because of the unsuitability of this approach to car navigation systems (page 3, lines 14-27 of the specification). Again, this is in contrast to the object retrieval unit of the present invention that searches a database using each of the search words respectively associated with the sentence element categories and retrieving the object data associated with the attribute words that match a single search word or a plurality of search words.

Regarding claim 3, the Examiner alleges that Paik et al. discloses the features of claim 3 of the present invention. The Applicant respectfully submits that the Examiner's rejection of claim 3 has now been rendered moot by the Applicant's claim amendment

presented in this reply. Claim 3 discloses retrieving one or a plurality of search words from a search criterion input in the form of a sentence of a natural language by analyzing the search criterion in accordance with a grammar of the natural language. A search is conducted relative to plurality of sentence element categories associated with a plurality of object data items, based on a single search word or a plurality of search words. The object data is retrieved with the attribute word that matches a single search word or a plurality of search words and outputting the object data that is retrieved. The search is conducted using at least a search word having an agent of action category, a search word having an action category and a search word having an object of action category.

Regarding claim 4, the Examiner alleges that Paik et al. discloses the features of claim 4 of the present invention. The rejection of claim 4 is rendered moot by the cancellation of claim 4 without prejudice or disclaimer.

Regarding claim 5, the Examiner alleges that Paik et al. discloses the features of claim 5 of the present invention. The Applicant respectfully submits that the Examiner's rejection of claim 5 has now been rendered moot by the Applicant's claim amendment presented in this reply and in light of the arguments presented above.

CONCLUSION

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John L. Ciccozzi, Reg. No. 48,984, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Attached hereto is a marked-up version of the changes made to the application by this Response.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1. 17; particularly, extension of time fees.

Respectfully submitted,
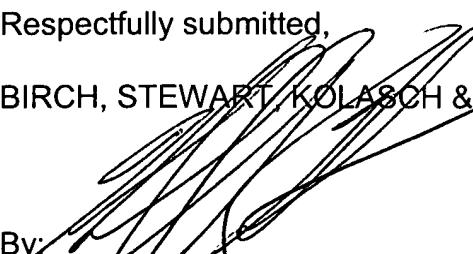
BIRCH, STEWART, KOLASCH & BIRCH, LLP

By:
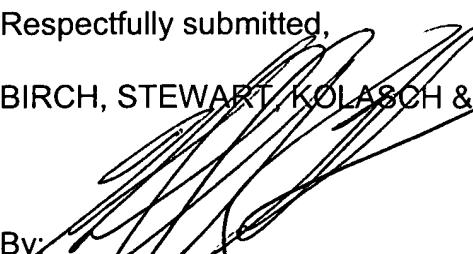
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Attachment: Version with Markings to Show Changes Made

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 3 and 5 have been amended as follows:

3. (Amended) An object data search method comprising the steps of:

retrieving one or a plurality of search words from a search criterion input in the form of a sentence of a natural language by analyzing the search criterion in accordance with a grammar of the natural language;

conducting a search relative to a plurality of sentence element categories associated with a plurality of object data items, based on a single search word or a plurality of search words; [and]

retrieving the object data associated with the attribute word that matches a single search word or a plurality of search words and outputting the object data thus retrieved; and

using at least a search word having an agent of action category, a search word having an action category and a search word having an object of action category.

5. (Amended) A computer-readable recording medium [stores] storing data according to a relational database structure, wherein tuples each comprising an object data item and a plurality of attribute words categorized according to sentence elements of a natural language are stored and tuples are filtered for attribute relations based on the grammatical structure of the natural language.

Claims 6 and 7 have been added.